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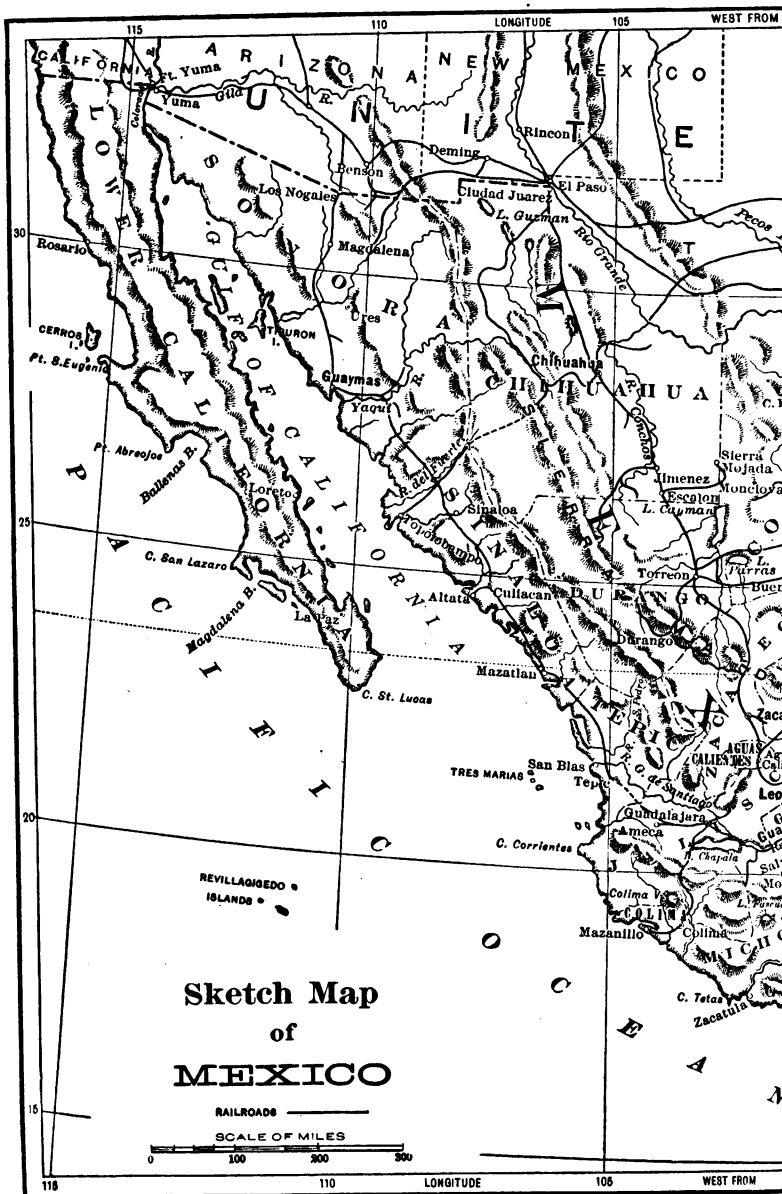
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**THE COUNTRY, STATES AND CITIES
THE PEOPLE, THE RESOURCES .
GOVERNMENT AND STATISTICS**

**BY
GEORGE J. HAGAR**

WITH MAPS



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PLAIN FACTS ABOUT MEXICO

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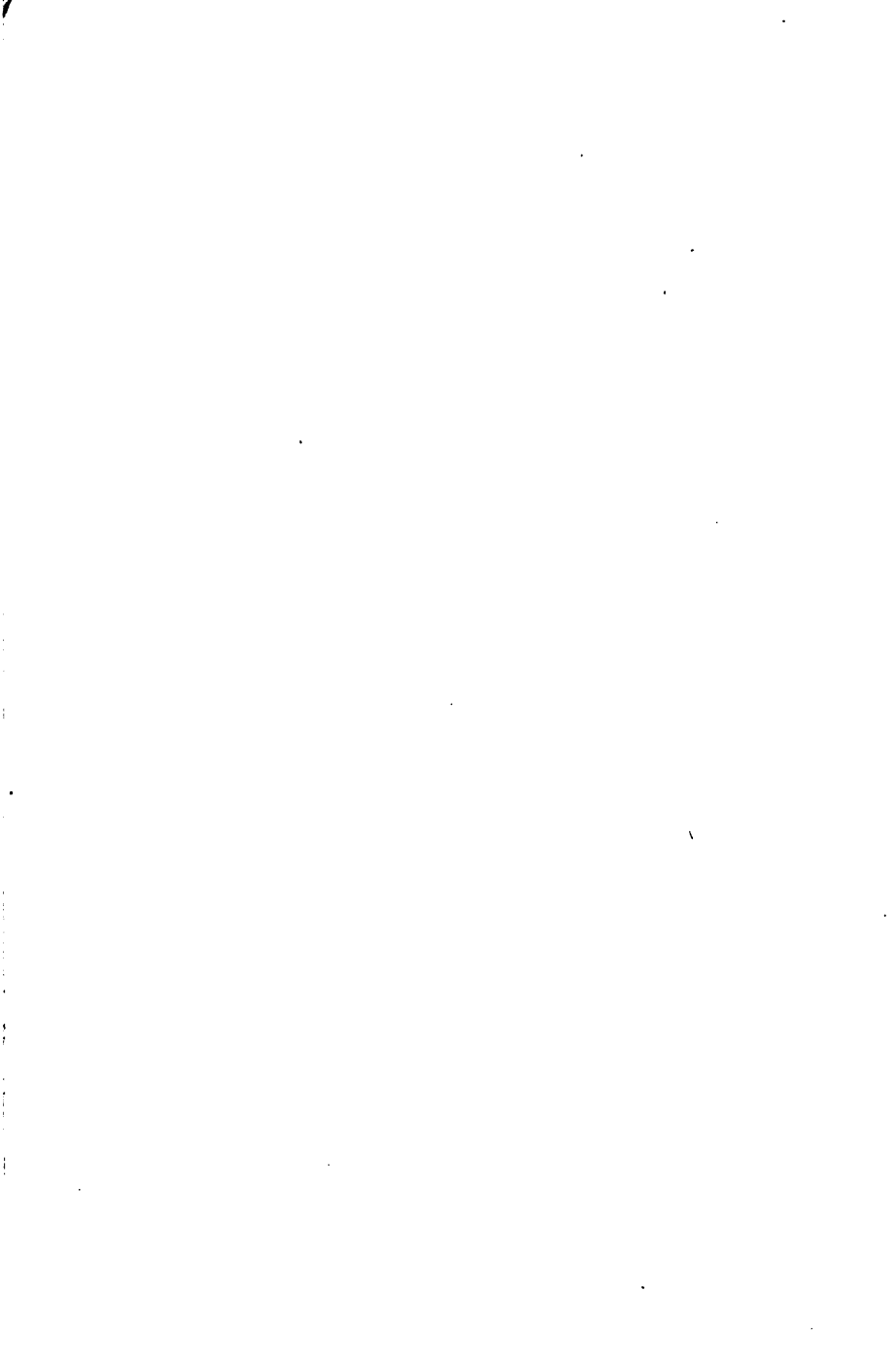
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FOREWORD

THIS is a convenient summary of the salient facts regarding Mexico's natural, racial, and economic features and plans of government and finance. In a brief compass easily available for the busy man this book aims to answer the question, "What is Mexico?" History and internal troubles are not touched upon. It is a matter of immediate importance to have at hand the basic facts regarding the great republic to the south of us with which we are necessarily intimately associated. This bird's-eye view of natural, racial, economic, industrial, and institutional conditions will answer questions which indicate a lack of a convenient *vade mecum* regarding a country of vast possibilities.

**PLAIN FACTS ABOUT
MEXICO**



PLAIN FACTS ABOUT MEXICO

I

NATURAL AND RACIAL FEATURES AND POPULATION

THE Republic of Mexico occupies the north-western portion of the isthmus which connects North and South America and the southwestern extremity of North America. It lies between $14^{\circ} 30'$ and $32^{\circ} 40'$ north latitude and between $86^{\circ} 45'$ and $117^{\circ} 5'$ west longitude, being thus in almost equal parts within and without the tropics. Its maximum length is 1,950 miles; extreme width, 750 miles; narrowest point, the Isthmus of Tehuantepec, 120 miles; Atlantic coast-line, 1,727 miles; Pacific coast-line, 4,574 miles.

Mexico is about three times as large as Austria-Hungary, and nearly four times as large as France, or equal in extent to Great Britain and Ireland, France, Germany, and Austria-Hungary

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combined. Exclusive of a number of outlying small islands, its area is about 765,535 square miles. It is bounded on the east by the Gulf of Mexico and the Caribbean Sea, on the south and southeast by Guatemala and British Honduras, on the west and southwest by the Pacific Ocean, and on the north by the United States.

The boundary line between Mexico and the United States was established by treaties in ~~1840~~ and 1853, and is now 1,833 miles in length, 1,136 of which are covered by the Rio Grande from the Gulf of Mexico inland. Under the Gadsden Treaty of 1853, the line is formed on the northeast by the Rio Grande from its mouth up to Ciudad Juarez on the Mexican side, opposite El Paso, Texas; then extends parallel with latitude 32° to about longitude $108^{\circ} 40'$, where it drops to Esapa, whence it extends in a parallel line to Nogales; then ascends northwest to near the confluence of the Rio Gila with the Colorado; and then extends due west to the Pacific, terminating a little to the south of San Diego, California.

Mexico is divided by nature into ~~three regions~~, each of which is marked by different features. The first comprehends the parts lying to the east of the Isthmus of Tehuantepec, which is crossed by the meridian of 95° west longitude, and called the Eastern Region. The second extends from the meridian of 95° north latitude in a curved line to

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the mouth of the Rio del Norte on the east (26° north latitude), and to the confluence of the Rio Gila with the Colorado ($32^{\circ} 45'$ north latitude) on the west, and comprises the Central and Northern Region, or Anahuac, as it was known long before the Spanish conquest. The third, or Lower California, comprehends the peninsula of that name on the west of the Gulf of California.

The Eastern Region.—This comprehends the peninsula of Yucatan, the western declivity of the tableland of Guatemala, the plain of Tabasco, and the Isthmus of Tehuantepec. Along the northern and western shores of Yucatan the surface is flat and sandy. The level country extends to a considerable distance inland, and the center of the peninsula is occupied by a long and comparatively narrow tableland inclosed by two ranges of low hills. From the ridge which traverses this tableland the surface descends rather rapidly to the west till it meets the plain of Tabasco, north of 17° north latitude. The surface here, being furrowed by numerous watercourses, is a succession of ridges of hills and valleys rather than an inclined plane. The climate is in general healthful, and, according to the different elevations of the surface, many of the productions of the West Indies may be profitably grown.

The plain of Tabasco is more than 250 miles long, and extends inland from 50 to 120 miles.

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Its surface is level and the soil alluvial. Being very fertile, the surface exhibits much heavy forest growth. Agricultural activities are seriously crippled by much of the surface being under water for several months during the rainy season. Still large quantities of maize, plantain, manioc, cocoa, vanilla, and indigo are obtained, besides some coffee. The plain is watered by a considerable river, the Rio de Tabasco, and its two branches, Usumasinta and the Grijalva. The Rio de Tabasco rises in the eastern corner of the tableland of Guatemala, and, flowing in a direction generally north by west, forms a considerable cataract south of 17° north latitude, where it descends from the tableland. Above the waterfall the river is navigable for canoes, and below it for larger craft. The Usumasinta joins the Rio de Tabasco a few miles above the mouth, after a course of more than 300 miles. The Grijalva rises in the range of hills in Guatemala, between the towns of Totonicapan and Gueguetenago, and runs with many bends in a northwest direction, in a wide valley, till it issues from it near the Isthmus of Tehuantepec, where it turns to the northeast by a bold sweep, and receives the name of Rio de Tabasco. After having joined the Usumasinta it falls into the Gulf of Mexico near Frontera, after a course of about 350 miles.

This plain occupies the northern portion and

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about one-half of the Isthmus of Tehuantepec. The southern half comprises a mountain ridge and a smaller plain. The southern plain, known as the plain of Tehuantepec, is about twenty-five miles wide, and extends along the Pacific from the boundary of Guatemala to some distance west of the town of Tehuantepec. It has a very hot and rather dry climate, and the soil, though not distinguished by fertility, is capable of producing several tropical plants. The plain is traversed by the Chimalapa River, which descends from the Cerro Pelado, and is navigable to San Miguel de Chimalapa, a distance of about thirty miles. On the same Cerro, but within the northern ridges, rises the Rio Huasacualco, which, breaking through some of the ridges, is joined by numerous small rivers, which descend from the western declivity of the tableland of Mixtecapan, and soon becomes a powerful river, though it is not navigable on account of rapids or cataracts. After it enters the plain of Tabasco there is no further obstruction to navigation, excepting that its mouth, in the southwestern recess of the Gulf of Mexico, is closed by a bar and shoals.

The Central and Northern Region.—This section in its natural features exhibits great variety. The eastern coast is low and sandy from the Punta de Rocca Partida ($18^{\circ} 40'$ north latitude) to the mouth of the Rio del Norte (about $25^{\circ} 45'$ north

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latitude). It extends in a continuous line, without being broken by inlets or bays, and its only harbors are those formed by the mouths of the rivers, and even these are only unsafe roadsteads, as the rivers of this coast, between $18^{\circ} 40'$ and 22° north latitude, with the exception of the Rio Alvarado, have little water except in the rainy season. North of 22° north latitude several rivers of considerable size fall into the sea, but except at their mouths the coast cannot be approached by vessels, as it is lined by long, low, and narrow sand-banks, which lie parallel to and from two to six miles from it.

The surface adjacent to the shores, and from three to ten miles inland, is very low, but is defended from the sea by sand-hills rising from 50 to 200 feet high. There the soil is sandy and almost destitute of vegetation. Back of this tract the surface rises gradually to the foot of an extremely steep ascent, which constitutes the eastern edge of an extensive tableland farther west. The land between the shores and this ascent is about sixty miles wide south of 22° north latitude; farther north it widens to about 150 miles; and as it approaches the northern boundary it rises rapidly toward the interior, attaining an elevation of from 2,500 to 3,000 feet at a distance of only fifty miles from the sea.

This tract is comprehended in the "hot coun-

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tries" (*tierras calientes*). Here the seasons are divided into the winter, or season of north winds, lasting from October to April, and the summer, or season of the breezes. The mean heat of the winter season is 71° F., but during the north winds (*los nortes*) the thermometer sometimes descends to 60° ; the mean temperature of the summer season is about 81° , and in July and August it is about 82° ; and the mean annual heat of the tract is 77° . This section is well adapted to the cultivation of all tropical products, and, as its soil, with the exception of the sandy shores, is possessed of considerable fertility, it yields rich crops of maize, bananas, pineapples, oranges, manioc, coffee, sugar, cocoa, and, under irrigation, rice.

The Remarkable Elevation.—The steep ascent which bounds this tract on the west rises in some places in terraces which lie between the declivities, and in such places the ascent occupies a considerable space; but in other parts it rises from 5,000 to 6,000 feet in a distance generally not exceeding ten miles in width, and frequently much less. The acclivity is so steep that on the whole line, nearly 600 miles, there are only two places where it is practicable for carriages, viz., at Jalapa, near Vera Cruz (19° north latitude), and at Saltillo, west of Monterey (26° north latitude). This ascent constitutes the outer edge of the elevated

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plains of this region. The edge itself is lined by a continuous series of hills rising in general only to a moderate elevation above the tablelands, but some of them attain a great height, as the Coffre de Perote, near the road leading from Vera Cruz to Mexico City, which is 13,415 feet above sea-level, and the peak of Orizaba, which attains a height of 17,373 feet.

These plains are divided into two parts by a range of mountains which traverses them in a general eastern and western direction, called the Sierra Madre. This chain begins near the eastern edge, about 21° north latitude, west of Tlacolula; continues in a west-by-north direction to San Felipe, $21^{\circ} 40'$ north latitude, where an offshoot branches southward; declines to the north-north-west west of San Felipe; then has its continuity broken into isolated ridges, as the Sierra de Altamira, about twenty miles east of Aguascalientes, and the group of mountains which contain the mines of Zacatecas; and reappears as a mountain range a short distance west of Zacatecas, and occupies a width of 100 miles from east to west. The mountains of La Encarnacion rise more than 10,000 feet above the sea and those inclosing the plain of San Felipe are probably as high.

Great Elevated Plains.—The elevated plains which spread out west of the steep ascent occupy the greatest part of the surface of Mexico. They are

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widest between 19° and 20° north latitude, where they occupy 360 miles from east to west. This extensive tract of country is divided into four plains unequal in extent, and separated from one another by ranges of hills which rise from 500 to 2,000 feet above their base. The most eastern plain has the city of Tlaxcala nearly in its center. The surface, which is pretty level, is from 7,000 to 7,500 feet above sea-level. Two lofty but isolated peaks, the Cerro de Pizarro and Mount Malinche (14,636 feet) are near the road which leads from the sea to Mexico City. A sterile tract, known as *El Mal Pais*, occupies about one-third of this plain. The chain of hills which divides the plain of Tlaxcala from that of Tenochtitlan contains the peak of Istaccihuatl (15,704 feet above sea-level) and the celebrated volcano of Popocatepetl (17,884 feet), the latter the highest mountain in Mexico. The plain of Tenochtitlan, west of Tlaxcala, is about 7,480 feet above sea-level; farther west is the plain of Toluca, which is somewhat smaller in extent; in the southern chain is the Nevado de Toluca, 15,160 feet above sea-level; and at the extreme west of the plains is that of Michoacan, which approaches the Pacific within about thirty miles. Nearly in the center of the last plain is the Lake of Patzcuaro, famous in the history of the ancient kingdom of Michoacan, whose capital, Tzintzon-tzan, was built on its banks. Toward the western

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extremity of the plain of Michoacan is the lofty peak of Tancitaro.

On the north the tablelands just mentioned border on others of a similar character. On the south the surface descends rapidly and very irregularly, except where it borders on the plain of Tlaxcala. This plain is joined on the south by that of Mixtecapan, which stretches to the Pacific and terminates with high mountains. North of 20° north latitude is the tableland of Querétaro, which extends to the ridge of the Sierra Madre. That portion which lies east of 100° west longitude is in general about 6,500 feet above sea-level, and its surface is broken by single groups or short ranges of hills which rise from 1,000 to 1,500 feet above the plain. This region contains numerous productive mines, and its central section comprises one of the richest agricultural districts in Mexico. This portion is 100 miles long and 30 miles wide, has numerous irrigation canals, and is especially productive in maize and wheat. Sterile tracts occur here and there, either covered with stones and then called *pedregal*, or with lava and called *mal pais*. A considerable part of this tract cannot be irrigated to advantage, though rather fertile, and is used mainly for pasture. On this tableland are many *barrancas*, or depressions in the surface having a steep declivity and descending frequently 1,000 feet below the general sur-

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face. These depressions are sometimes three or four miles wide and still longer; their climate is considerably milder than that of their environments; and they are the sites of several small towns.

Climate of the Tablelands.—The climate of the main tablelands varies in proportion to their elevation above sea-level. In those of Tenochtitlan and Tlaxcala, which are nearly equal in this respect, the mean summer temperature is 62° . In winter the thermometer generally ranges between 45° and 47° , and sometimes, though rarely, descends below 32° . In summer it never exceeds 75° in the shade. On the tableland of Toluca, which is the most elevated, the air is so cold during the greater part of the day that the thermometer generally varies between 42° and 46° . On the tablelands of Valladolid, Mixtecapan, and Michoacan, which are considerably lower than that of Tenochtitlan, the mean annual temperature varies between 66° and 68° . All of these sections, being more than 5,000 feet above sea-level, are locally called "cold countries" (*tierras frias*). The seasons here are only two, that of the rains (*estación de las aguas*) and the dry season, or summer (*el estio*). All of these tablelands have rather an arid soil, which can only be utilized in the cultivation of grain where it can be watered, and even this advantage is not to be depended on for

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steady relief, as many of the rivers disappear in fissures of the rocks. The sections that are elevated from 2,500 to 4,000 feet above sea-level, such as the broken region lying between the tablelands of Tenochtitlan and Toluca and Michoacan on one side, and between the tableland of Mixtecapan on the other, and the uneven plain of Jalisco, are called *tierras templadas*. Their mean annual temperature is between 75° and 78° , and they have nearly a continual spring, as the difference of the temperature in the colder and hotter season does not exceed 8° , or at the utmost 10° . These tracts produce the principal tropical fruits and the sugarcane in abundance, and have a healthful climate all the year round.

The Sierra Madre Region.—The country which is bordered by this range on the south and west is a plain nearly 700 miles long, and from 100 to 300 miles wide, terminating on the northeast on the banks of the Rio del Norte, and at the Sierra de las Espuelas, the most northern offset of the Sierra Madre. The soil about San Luis Potosi and in the Valle del Maiz, which lies on the banks of the Rio Tamoin, a tributary of the Rio Panuca, is quite fertile, and a great portion of this region is utilized for pasture. The northern section is less favored by nature, especially as it suffers greatly from the scarcity of rain, which in the southern portions is far from being abundant, and north

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of 27° north latitude is very rare. The soil here holds a great portion of carbonate of soda, and the section contains numerous dry salt lakes, from which large quantities of the carbonate have been obtained for use in the manufacture of soap. All the rivers which water this region rise along the eastern declivity of the Sierra Madre, and, running northward, are lost in some basins having no communication with the sea, with the exception of the Rio Conchos, which rises with several branches between 26° and 28° north latitude, and falls into the Rio del Norte, near 31° . The cultivable land in this section is limited to the river-bottoms, which extend from two to four miles along the banks and produce maize and other grain. Cotton is grown in the valley of the Rio Nasas, and there are extensive vineyards in the vicinity of the Lake of Parras. The country between the Sierra Madre and the Pacific is divided naturally into two distinct regions, which may be designated as the plains of Cinaloa and the hilly region of Sonora. The former extends between 24° and 28° north latitude, and the latter between 28° and 32° . The plains are perfectly level; only hills of moderate size divide them from the Sierra Madre; and their soil is a sandy clay, almost without a pebble. The rains usually set in about June 24th, and last approximately two months, and the greatest heat is experienced before the rains, from the month

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of March, when the country is exceedingly parched. Sonora, which begins at some distance north of the Rio Mayo, has a tract of low and level land along the sea, but it soon rises to some elevation, and then extends nearly on a level many miles inland. Between the high hills that parallel the Sierra Madre are fertile valleys, watered by numerous rivers. As this part of Mexico is within the temperate zone, it partakes of the great changes in temperature which commonly occur in such countries, the thermometer ranging during the year between 30° and 95° . The winds from the Rocky Mountains are frequently freezing in character. The summer is exceedingly hot, and the high temperature continues for several months.

The Lower California Region.—The third natural division of Mexico is a peninsula separated from the mainland by the Gulf of California, and extends from Cape San Lucas, $22^{\circ} 45'$ north latitude to the northern extremity of the gulf 32° , where it is bounded by the State of California. It is approximately 770 miles long and from 30 to 120 miles wide, and has an area of 58,400 square miles. This region may be considered as a continuous mass of high, bare, and steep rocks, with numerous ravines intersecting them. With few exceptions it hardly contains any level ground that can be called a valley. The mountain ranges are, structurally, a continuation of the Sierra Nevada of California.

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Nearly all tracts that contain cultivable land are on the eastern declivity of the mountains. The western side generally sinks with a rapid descent to the Pacific, and the shores are steep and rocky. The climate is exceedingly dry and hot; the vegetation is very scanty; some fruits, maize, and manioc are cultivated; and some minerals of commercial value are known to exist, though only a few have been systematically worked. With the thermometer rising frequently to 100° F. and occasionally higher, Lower California may be considered one of the hottest regions of America.

Racial Features.—It is difficult to give anything like a reliable analysis of the various races contributing to form the Mexican nation as it is. They may be divided vaguely, however, into three sections: the ~~Spaniards~~, descendants chiefly of the conquerors of Mexico, with a sprinkling of other Europeans; the ~~native~~ Indians, some forty or fifty tribes in all; and the mixed population arising from a blending of these two. It is believed that the mixed population (*mestizos*) constitute about one-half of the entire population, and the Indians about one-third. The Mexican Indians are locally declared to be among the most pacific and gifted of their kind, attaining great distinction in scholastic and industrial pursuits, and forming by no means the least valuable section of modern Mexico's progressive citizens. The

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STATES AND TERRITORIES	Area Square Miles	Population, 1910	Capitals
Aguascalientes....	2,969	118,978	Aguascalientes
Campeche.....	18,086	85,795	Campeche
Chiapas.....	27,222	436,817	San Cristobal
Chihuahua.....	89,974	405,265	Chihuahua
Coahuila.....	63,728	367,652	Saltillo
Colima.....	2,273	77,704	Colima
Durango.....	42,265	436,147	Durango
Guanajuato.....	10,948	1,075,270	Guanajuato
Guerrero.....	24,996	605,437	Chilpancingo
Hidalgo.....	8,575	641,895	Pachuca
Jalisco.....	33,486	1,202,802	Guadalajara
Mexico.....	8,949	975,019	Toluca
Michoacan.....	22,656	991,649	Morelia
Morelos.....	2,734	179,814	Cuernavaca
Nuevo Leon.....	23,679	368,929	Monterey
Oaxaca.....	35,383	1,041,035	Oaxaca
Puebla.....	12,204	1,092,456	Puebla
Querétaro.....	4,492	243,515	Querétaro
San Luis Potosi...	24,000	624,748	San Luis Potosi
Sinaloa.....	27,553	323,499	Culiacan
Sonora.....	76,619	262,545	Hermosillo
Tabasco.....	10,072	183,708	S. Juan Bautista
Tamaulipas.....	32,268	249,253	Ciudad Victoria
Tepic (Ter.).....	10,951	171,837	Tepic
Tlaxcala.....	1,595	183,805	Tlaxcala
Vera Cruz.....	29,283	1,124,368	Jalapa
Yucatan.....	18,565	337,020	Merida
Zacatecas.....	24,467	475,863	Zacatecas
L. California(Ter.)	58,328	52,244	La Paz
Federal District..	579	719,052	City of Mexico
Quintana Roo....	16,638	9,086	Santa Cruz de Bravo
Total.....	765,535	15,063,207	

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~~They~~ are laborers, originally agricultural, who belong to probably the lowest order of intelligence and activity, and are practically in a state of servitude, though slavery does not nominally exist in Mexico. Many of the *mestizos* are farmers and ranchers, operating on a more or less extensive scale. The term ~~lazzos~~ is applied to habitually idle and vicious persons.

The foreign population, according to the census of 1910, comprised 29,541 natives of Spain; 28,639 of the United States; 21,334 of Guatemala; 13,203 of China; 5,264 of Great Britain; 4,604 of France; 3,827 of Germany; 3,478 of Cuba; 2,907 of Turkey; 2,595 of Italy; 2,276 of Japan; 1,546 of Africa (Arabs); and 5,433 of all other countries—in all, 116,527.

Area and Population.—The table on page 16 shows the area and population of the States and Territories of the federation, as ascertained by the census of 1910, together with the capital cities.

The population in 1900, as reported by the census, was 13,607,259; hence there was an increase of 1,455,948 in the decade following. Of the total in 1910, 7,504,471 were males, 7,655,898 females, and 116,527 of foreign birth. An official estimate in 1912 gave a total population of 15,501,684.

Population of Principal Cities and Towns.—The following shows the population of the principal cities and towns as reported by the census of 1910:

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Aguascalientes.....	45,198	Morelia.....	40,042
Celaya.....	23,062	Oaxaca.....	38,011
Chihuahua.....	39,706	Orizaba.....	35,263
Durango.....	32,263	Pachuca.....	39,009
Guadalajara.....	119,468	Puebla.....	96,121
Guanajuato.....	35,682	Querétaro.....	33,062
Irapuato.....	21,281	Saltillo.....	35,414
Jalapa.....	24,816	San Luis Potosi.....	68,022
Leon.....	57,722	Tacubaya.....	35,830
Merida.....	62,447	Toluca.....	31,023
Mexico City.....	471,066	Vera Cruz.....	48,633
Monterey.....	73,528	Zacatecas.....	25,900

II

AGRICULTURAL AND MINING INDUSTRIES

MEXICO, through the ages, has become so well known for its mineral wealth, notably as a silver-producer, that foreign students of its affairs have paid less attention to its agricultural resources than its possibilities in this respect fairly warrant. It is conceded that the agriculture of Mexico has not yet been thoroughly systematized, and that there is ample room in this line of endeavor for improvement and development. There are immense areas adapted to the cultivation of the staple cereals, and yet from the earliest times of which records survive, all through the colonial epoch and down to the present day, the country's production of such crops has, at frequently recurring intervals, proved insufficient for the needs of its inhabitants. With Mexico's great variety of climate it would seem that the country offers to each intending settler a valley or a hillside where he may be surrounded with just the conditions as to climate and scenery which he desires. As before

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indicated, Mexico is situated almost entirely within the tropics, and hence the heat natural to such latitudes is counteracted in a large part of the country by the effects of altitude.

Climatic Zones.—It has been customary to divide Mexico climatologically into three zones—the hot country (*tierra caliente*) at an elevation not exceeding 3,000 feet above sea-level; the temperate zone (*tierra templada*) at altitudes ranging from 3,000 to 5,000 feet; and the cold country at elevations exceeding that of 5,000 feet, up to about 8,000. The hot lands are the lands along the coasts, where the mean annual temperature is about 82°–86° F., and where there are dense tropical jungles, forests of mahogany and other cabinet woods, and cultures that require a combination of heat and humidity. The vegetation in the lower altitudes of the temperate zone is both of a tropical and a sub-tropical character, and to this zone belong most of the typical hot-country products of Mexico, such as cotton, rice, sugar, coffee, fruits, and tobacco. In the higher region of this zone the characteristic crops of a moderate climate are cultivated with success, such as Indian corn, wheat, and other cereals. As may be inferred, from previous statements, some of the Mexican States combine both climates within their borders, so that a spectator can look down from the regions of the pine into those of the palm

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and sugar-cane. The cold country, so called locally, though much of it enjoys a mild and equable climate, embraces the great central plain or tableland on which Mexico City is situated, at an altitude of over 7,000 feet above sea-level. This is the region of the great *haciendas*, or immense estates of the Mexican landed aristocracy. A leading condition that has militated against permanent prosperity of agriculture in this region is the lack, in many cases, of the necessary capital to cultivate estates to full capacity and to undertake irrigation works and other needed improvements. In the cold country all the cereals are preferably, and some of them exclusively, cultivated, and it is the home of the great plantations of *maguey*, from which *pulque*, the favorite drink of the masses, is prepared. It is also the region of periodical droughts, which, when they occur, occasion insufficient harvests and necessitate the importation of foreign cereals.

Grains.—Indian corn is grown in the States of Jalisco, Vera Cruz, Guanajuato, Puebla, and Oaxaca; wheat in the lowlands of Guanajuato, the valley of St. Martin in Puebla, and the Toluca Valley in the State of Mexico; barley in small quantities in Hidalgo, Tlaxcala, Puebla, and the Federal District; rice in Colima, Morelos, Vera Cruz, and Tabasco; *garbanzo*, or chick peas, and *frijol*, or Mexican beans—both staple articles of

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food—in nearly all of the States, but more especially in Vera Cruz and Jalisco. As regards wheat and corn, the production is generally insufficient for the home consumption, and the Executive Government is intrusted with discretionary power to reduce or remove the import duties when necessary. The Government has already instituted a system of State-aided irrigation and reclamation service, the most notable undertakings of which are the La Sautaña scheme for the irrigation of 2,000,000 acres in northern Tamaulipas, and the Chapala scheme for the reclamation of 150,000 acres of land at the eastern end of the lake of that name. The most pretentious of all projects under consideration is that known as the Nazas irrigation scheme, which comprises the building of a huge storage reservoir in the San Fernandez Cañon, about forty miles to the northwest of Torreon, for the conservation of the waters of the Nazas River, thereby bringing under cultivation many additional tracts of the fertile Nazas and Laguna valley lands. The estimated cost of this scheme is about \$12,000,000.

Sugar - Cane.—Considerable progress has been shown recently in the sugar-cane industry, and there is a growing tendency to increase the acreage under cultivation and to modernize the machinery for manufacturing processes. This is especially the case in the factories in the States of

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Morelos, Michoacan, and Jalisco, and in this regard the amount of foreign capital invested is constantly increasing.

Rubber.—Wild castilloa is found throughout southern Mexico and on the western coast lands as far north as Tepic. The principal cultivated areas are situated in the Departments of Palenque and Soconusco, in the State of Chiapas; the northern part of the Isthmus of Tehuantepec; the river area of the Papaloapam and its tributaries; and the coast territory of the State of Vera Cruz. At Torreon, Gomez Palacio, and San Luis Potosi factories have been established for the extraction of rubber from the guayule shrub (*Parthenium argentatum*), which grows wild in the mountain parts of the States of Coahuila, San Luis Potosi, Durango, and Chihuahua. In view of a threatened exhaustion of present supplies, considerable experimenting is in progress for the artificial cultivation of the shrub.

Cotton.—The principal cotton-growing region of Mexico is situated in the Laguna district of Coahuila and Durango, covering an area of approximately 200,000 acres, and producing probably 90 per cent. of all the cotton grown in the country. The crop depends almost entirely on the amount of water in the Nazas and Laguna basins available for irrigation, as the average annual rainfall is both insufficient and ill-timed

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for its needs. It is estimated that the production of this staple in Mexico yields about one-half the amount required for use in domestic industries.

Fruits.—In the cultivation of orchard fruits, it is a prevalent belief that there has been a retrogression both in the quantity and the flavor of the output. There are sections in the Valley of Mexico where the large *huertas* were once in flourishing operation, supplying the markets of Mexico City with pears, apples, peaches, and apricots of a quality superior to that which they show at present. Both the climate and the soil of Mexico in the temperate regions afford every advantage for the cultivation of such fruits, yet large quantities of pears and apples are annually imported from California. Strawberries of the finest flavor are grown all the year round in the neighborhood of Irapuato, State of Guanajuato, and at points in the Valley of Mexico. Indian fruit-growers of San Angel have within the last few years undertaken the culture of the raspberry, a fruit formerly unknown in Mexico.

The oranges of Yautepec in the State of Morelos, of La Barca and other districts in the State of Jalisco, of Hermosillo in Sonora, of Montemorelos in the State of Nuevo Leon, and of Zimapan in the State of Hidalgo, are famous not only in Mexico, but also in the United States. For the production of the typical fruits of the tropics, such as the

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pineapple, the guava, the banana, the *mameh*, the luscious custard-apple, the mango, the different and delicious varieties of *zapote*, the alligator pear, etc., Mexico affords facilities equal to those of the West Indian islands. At present the production of marketable qualities of practically all kinds of fruit is inconsiderable and wholly unsystematized, and experts assert that there are promising openings in the general line of fruit culture for growers possessing capital, technical knowledge, sound business judgment, and perseverance.

Coffee.—Formerly the State of Vera Cruz produced nearly all the coffee grown commercially in Mexico, more especially in the districts of Cordoba, Orizaba, Huatusco, Coatepec, and Jalapa. From this center the cultivation gradually spread to the adjacent States of Oaxaca and Puebla, where it is featured by the Indians. The most productive district to-day is that of Soconusco, in the State of Chiapas, where the principal plantations are operated by German capital. Coffee is also cultivated in Morelos, Jalisco, Tepic, and Michoacan, but not on an extensive scale.

Live-Stock.—In live-stock interests, the horse is not bred in large numbers, the mule being more generally employed, as being hardier and better adapted as a draft and pack animal. The varying climatic conditions of the country have produced breeds of cattle that have considerably departed

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from the original Spanish type. Those of the northern plateau are small, hardy, and long-lived; in the south they are larger and better nourished, owing to the permanent character of the pasture, but less vigorous because of the heat and insect plagues. The largest herds are to be found in Chihuahua and Durango. Sheep-breeding is largely confined to the cooler sierra districts, and some attention is now being given also to the breeding of goats, because of the local demand for their skins. The big cattle-ranches of the northern States are to a large extent in the hands of wealthy owners, and can only be secured in part or in whole by a considerable investment of capital.

Mining Industries.—Mining is the most highly developed and best organized of Mexico's industries, the importance of which is made manifest by the fact that between 5 and 6 per cent. of the world's annual production of gold, 30 per cent. of silver, 6-7 per cent. of copper, and 12 per cent. of lead is obtained within its borders. A recent estimate gives the amount of capital invested in the industry as \$647,200,000, of which \$499,000,000 is American, \$87,200,000 is English, \$10,000,000 is French, and \$29,400,000 is Mexican.

Gold is largely produced as a by-product from the silver-mining districts throughout the country, the famous El Ora camp lying in the States of

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Mexico and Michoacan. The best-known silver camps are those in the Pachuca district of the State of Hidalgo, the Guanajuato district, the Santa Eulalia camp in eastern Chihuahua, the Andres del Rio and Parral districts in the western part of the state, the Catorce region of San Luis Potosi, and the Zacatecas and Fresnillo camps. The leading copper camps are the Green Cananea and the Moctezuma in the State of Sonora, and the Boleo in Lower California, and the principal lead-producing camps are in the State of Chihuahua. The only exploited antimony deposits are at Charcas and Catorce, in the State of San Luis Potosi, and the bulk of the zinc output is from the Santa Eulalia, San Isidro, Almoloya, Parral, and Santa Barbara districts in the States of Chihuahua and San Luis Potosi.

The only State at present producing commercial coal and coke is Coahuila, but development work is in progress at coal-fields in Sonora, Oaxaca, and Jalisco. There are numerous iron deposits of commercial value, but most of them are undeveloped because of their inaccessibility. Those in the northern part of the country are the best favored for approach, and supply the requirements of the iron and steel works in the States of Nuevo Leon and Hidalgo. Sulphur is obtained exclusively from the mines near Cerritos, in the State of San Luis Potosi, and graphite from the Santa

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Maria mines, about twenty miles south of La Colorado, in the State of Sonora.

Owing to disturbed local conditions, following the resignation of President Diaz on May 25, 1911, work was restricted or wholly suspended by many of the mining and smelting companies of northern Mexico. In the central and southern sections, especially in the three great camps of Pachuca, El Oro, and Guanajuato, conditions were such as to favor a practically normal output, and the same may be said of the smaller camps and mines in the States of Mexico, Michoacan, Guerrero, Oaxaca, Guanajuato, Hidalgo, and Jalisco. Returns of the operating companies indicated that the most prosperous of recent years was the fiscal one of 1911-12, when the gold production was valued at \$49,905,115, and silver at \$88,839,747. The output of copper was 59,421 metric tons in ingots; of copper ore, 121,441 metric tons; of lead, 116,758 metric tons; and of zinc, 42,257 metric tons.

Manufacturing Industries.—Although some of the industrial establishments of Mexico can challenge comparison with those of the most advanced manufacturing countries, the industrial development of the country is, as yet, only in its beginning, and, generally speaking, Mexico is largely dependent on importations. There is a weighty demand for a scientific exploitation of the forest

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resources of the country. The forests of the hot-country States along the coast contain mahogany and a great variety of other cabinet and dye woods, while the extensive tracts of the temperate region contain a good quality of pine and other timber, suitable for carpentering and construction purposes. Although timber and many varieties of fibrous plants and other material suitable for pulp and paper manufacture are found in various sections, paper and paper stock have to be imported in large quantities to meet the growing demand of the printing and allied trades.

It is estimated that about 25,000 tons of raw hides are tanned annually, the chief center of this industry being Mexico City and Leon. Modernly equipped shoe-factories are in operation in Mexico City, Puebla, Guadalajara, Mazatlan, Parral, Saltillo, and Monterey. Of approximately 150 cotton-mills, the larger and more modern are in Mexico City, Puebla, and Orizaba. The combined output of all these mills has reached a value of \$50,000,000 in a single year. The manufacture of woolen goods is carried on in the States of Mexico, Aguascalientes, Durango, Guanajuato, Hidalgo, and Puebla; the largest plant is at Tlalnepantla, in the State of Mexico. The only silk-factory is in the Santa Maria district of Mexico City, its specialty being the silk *rebozo*, or light shawl so much worn by the women of Mexico.

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Iron-foundries are numerous, and the quality and abundance of the mineral make it possible for them to turn out good work; but in most of them the product comprises little more than the smaller agricultural implements and ordinary marketable iron. The most important iron and steel producer is at Monterey; others are in the States of Hidalgo and Jalisco and the Federal District. Almost every State possesses both cigar and cigarette factories, which consume the raw material produced throughout the country. Certain brands of Mexican cigars are known and esteemed in Europe, the best qualities being produced in the State of Vera Cruz. A single factory in Mexico City has turned out from 17,000,000 to 20,000,000 cigarettes daily.

III

MEXICO'S GREATEST NATURAL ASSET

THROUGHOUT the Gulf coastal plain, from southern Tamaulipas to Campeche, there are indications of oil deposits, to a greater or less extent derived from rocks of various ages in the shape of surface exudations of petroleum or liquid asphalt. These vary in size from small seepages a few inches in diameter to asphalt lakes a hundred or more feet in diameter, such as those occurring at Solis, Chijol, Cerro Viejo, or Cerro Azul. The asphalt varies in consistency from a heavy oil to various hard veins, and in certain parts of the same region there are seepages of a paraffin-base light oil.

The area over which seepages most frequently occur is that part of the coastal plain between the Rio Soto la Marina and the vicinity of Jalapa. This area is roughly triangular in shape, being bounded on the east by the Gulf of Mexico and on the southwest and northeast by the front of the great central plateau. It comprises, roughly, an

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area of about 17,000 square miles. Tampico is the most central point of any importance in this district, and on account of its harbor, railways, and position with regard to inland waterways, is the distributing-point for the oil region.

Geologically, the oil of the Tampico region occurs in the Oligocene, Eocene, and Cretaceous formations, the oil-bearing rock being for the most part a porous limestone; and the oil-bearing rocks of the isthmus region are of Pliocene and Pleistocene age, the formation in which the oil occurs being usually a true quartz sand.

The majority of oil-wells have been put down on land leased from the Mexican farmers. The leases are taken ordinarily for thirty years, a yearly rental, commonly paid two or three years in advance, and ordinarily from five to ten per cent. of the oil, being the consideration. Ten-per-cent. royalties prevail in the northern part of the field, and five-per-cent. in the southern, except near the best asphalt seeps. The money consideration varies widely, according to the situation of the land, and is constantly rising as exploitation proceeds.

Since 1901 exploratory work has been systematically carried on in the southern part of the State of Vera Cruz, and a single company is developing and refining the products of the four fields of San Cristobal, Soledad, Ixhuatlan, and Tecuanapa, all

THE GREAT PETROLEUM ZONE OF MEXICO

The inclosures indicate fields controlled by various Companies
● " wells under operation
--- " pipe lines
+ + + " railways
○ " localities

The side of each square represents 20 miles

This map illustrates the Great Petroleum Zone of Mexico, showing various oil fields controlled by different companies, pipelines, railways, and localities. The map includes a legend and a scale bar.

Legend:

- wells under operation
- pipe lines
- + + + railways
- localities

Scale: The side of each square represents 20 miles.

Map Details:

- Oil Fields:** MEX. PET. CO., SHELL CO., INDEPENDENT COS., LOS LIANOS (125 Acres), LOMA ALTA, OZULUAMA, INDEPENDENT CO., MEX. PET. CO., INDEPENDENT COS., EAGLE OIL CO., TANGUIJO, MONTECRISTO (400 Acres), BARRA TANGUIJO, TAMPAICO, LOS LOBOS, EMERALDA (125 Acres), PENN. MEX. OIL CO., INDEPENDENT CO.
- Pipelines:** TAMPAICO ALTO, LOS LIANOS, LOMA ALTA, OZULUAMA, LOS LOBOS, BARRA TANGUIJO, TAMPAICO, LOS LOBOS, EMERALDA, PENN. MEX. OIL CO., INDEPENDENT CO.
- Railways:** TAMPAICO ALTO, LOS LIANOS, LOMA ALTA, OZULUAMA, LOS LOBOS, BARRA TANGUIJO, TAMPAICO, LOS LOBOS, EMERALDA, PENN. MEX. OIL CO., INDEPENDENT CO.
- Localities:** TAMPAICO, LOS LIANOS, LOMA ALTA, OZULUAMA, LOS LOBOS, BARRA TANGUIJO, TAMPAICO, LOS LOBOS, EMERALDA, PENN. MEX. OIL CO., INDEPENDENT CO.

wells under operation

• " wells under operation

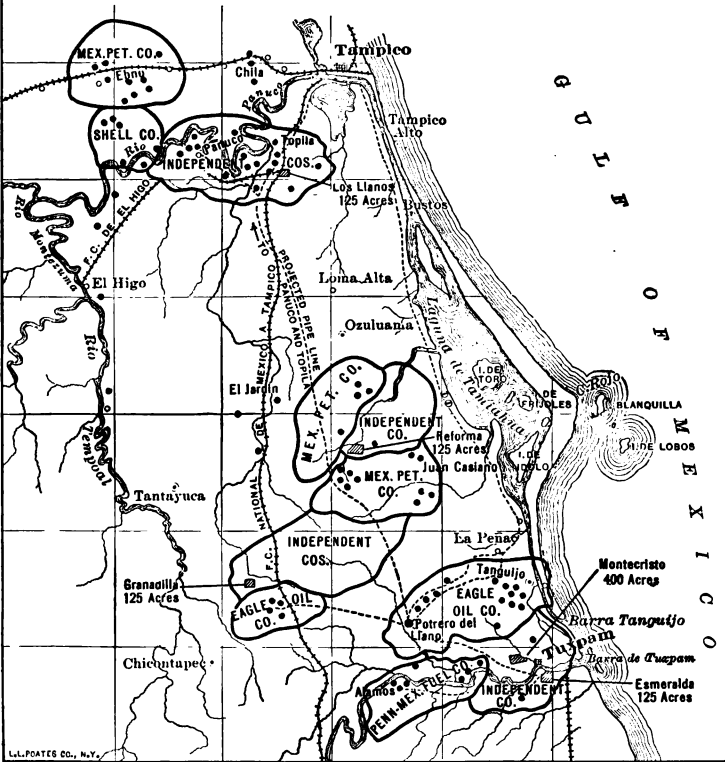
----- " pipe lines

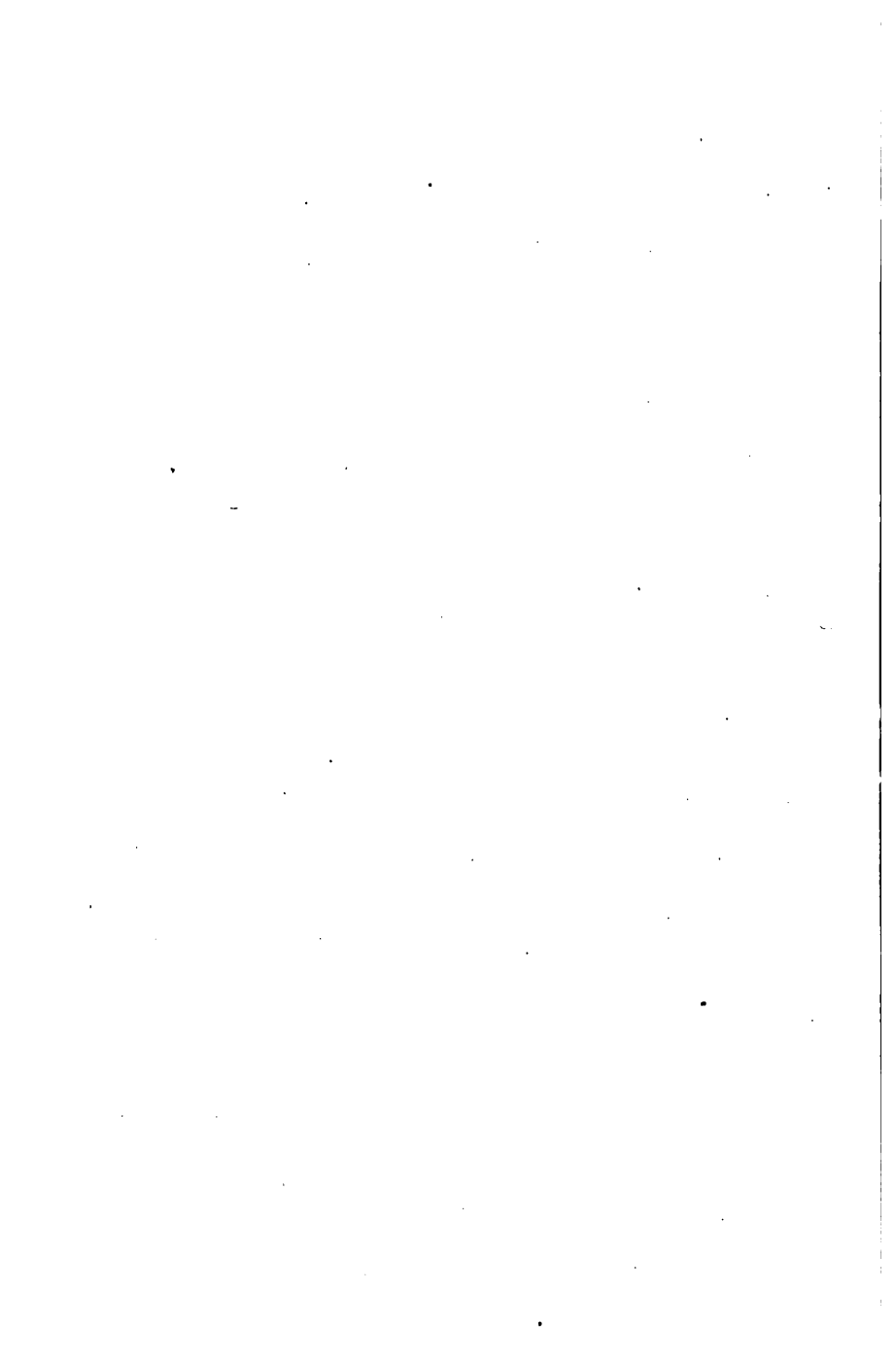
“railways

+++++	11	railways
o	14	localities

localities
side of each arrow represent

The side of each square represents 20 miles





MEXICO'S GREATEST ASSET

on the Isthmus of Tehuantepec, and is similarly engaged in the Macuspana district of Tabasco.

Most of the oils at present being produced are heavy and more particularly adapted for use as fuel, yet they contain valuable refining qualities, and it is an interesting fact, locally, that fields are now in the course of development where oils of the same character as the best Pennsylvania grades are found. It is believed, however, that it will be as a source of fuel that the Tampico fields will attain their greatest importance in the next few years.

At the end of 1913 there were upward of twenty separate fields in the Tampico region, either producing oil or capable of such production. The principal ones were Potrero del Llano, Tierra Amarilla, Tanhuijo, and Alazan, controlled by the Mexican Eagle Oil Company; Ebano, Chijol, and Juan Casiano, controlled by the Mexican Petroleum Company; the Alamo, controlled by the Penn-Mexican Company; the Papantla, controlled by the Oilfields of Mexico Company; and the Topila and Panuco Caracol-Salinas fields, in which numerous operating companies were engaged, among them the East Coast, the Waters-Pierce, the Corona, the Producers, and the Gulf Coast companies.

These various oil regions are connected with tide-water through three river ports, Tampico,

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Tuxpam, and Puerto Mexico. Tampico is situated six miles west of the Gulf of Mexico, on the Panuco River. Commencing at the jetties on both sides of the river, and extending past the city, are located the various tank "farms," loading-wharves, and "topping"-plants of the Mexican Eagle, Huasteca Petroleum, Pierce Oil, Standard Oil, and other operating companies. Within six miles of Tampico, steel tankage of fully 5,000,000 barrels capacity has been erected. Tampico is the terminus of two branches of the National Railways, one leading to Monterey, and thence to the border towns of Laredo, Brownsville, and Eagle Pass; the other, the San Luis Potosi section, leading to the elevated central plateau; and it is also the terminal of pipe lines owned by the Huasteca, Mexican Eagle, and Tampico companies. The Tuxpam port is situated five miles west of the Gulf of Mexico, on the Tuxpam River, where all freight has to be lightered on account of shallow water. It is the terminal of the pipe lines of the Mexican Eagle and Oilfields of Mexico companies, and the principal loading-station of the former company. Puerto Mexico is a modern port, on the Coatzacoalcas River, where tank steamers of the largest draught can be accommodated. At Minatitlan, twenty miles up the river, is situated the large refinery of the Mexican Eagle Company, whose plant is connected by a branch

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line with the Tehuantepec National Railway, by which easy access to the Pacific ports from Salina Cruz is afforded. For the Atlantic service the tank steamers are loaded partly at the company's wharves at Minatitlan and partly at Puerto Mexico, there being pipe-line connection between the two stations.

There are several petroleum-refining plants, the principal ones being situated at Minatitlan (Mexican Eagle Oil Company), and at Tampico (Waters-Pierce Company). The former company has a daily input of 9,000 barrels; the latter of 6,000. The products of these two refineries include naphtha, illuminating and lubricating oils, paraffin wax, and asphalt. Fuel oil is used, not only on the railways, but also in smelting, mining, and industrial plants generally.

IV

COMMERCE, BANKING, AND FINANCE

ALTHOUGH Mexico has an enormous seaboard, comparatively little of it is naturally suited to the purposes of commerce. Of late considerable progress has been made in the direction of bringing the ports of the country into line with the improved railway facilities and the growing volume of trade, and to-day Mexico has some of the finest and best-managed ports on the continent. The chief ports (with the States in which they are situated) are Acapulco (Guerrero); Altata (Sinaloa); Campeche (State of same name); Ensenada (Lower California); Frontera (Tabasco); Guaymas (Sonora); Laguna de Terminos (an island off Campeche); Manzanillo (Colima); Matamoros (Tamaulipas); Mazatlan (Sinaloa); Progreso (Yucatan); Puerto Angel (Oaxaca); Puerto Mexico, formerly called Coatzacoalcos (Vera Cruz); Salina Cruz (Oaxaca); San Blas (Tepic); Santa Rosalia (Lower California); Soconusco (Chiapas); Tampico (Tamaulipas); Tux-

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pam (Vera Cruz); and Vera Cruz, the chief port of the country (in State of same name).

In the fiscal year ended June 30, 1913, the declared total value of the foreign trade amounted to \$496,177,956, to which imports contributed \$195,772,339, and exports \$300,405,617. The import trade was distributed as follows: From the United States, \$97,287,556; Great Britain, \$25,900,093; Germany, \$25,220,770; France, \$18,337,956; Spain, \$10,530,642; other countries, \$18,495,322. The export trade was: To the United States, \$232,035,708; Great Britain, \$31,147,104; Germany, \$16,438,019; France, \$7,151,019; Spain, \$2,182,827; other countries, \$11,450,940. The export trade, classified by products, was as follows: Mineral, \$189,648,610; vegetable, \$85,942,954; animal, \$19,837,832; manufactured, \$3,345,264; unclassified, \$1,630,955. The import trade comprised animals and animal products, vegetable products, mineral products, textiles, chemical products, wines and spirits, paper and paper manufactures, machinery and implements, vehicles, and arms and explosives.

The value of the total trade was distributed by ports of entry as follows: Gulf ports—imports, \$147,315,298; exports, \$216,014,630: Pacific ports—imports, \$10,002,736; exports, \$17,566,647: Northern frontier ports—imports, \$38,436,419; exports, \$66,179,856: and South-

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ern frontier ports—imports, \$17,884; exports, \$644,482.

Official reports of the United States Department of Commerce, covering the calendar year 1915, showed: Imports of merchandise from Mexico, \$83,551,993, and exports of merchandise to Mexico, \$41,071,140, both figures representing the values in American gold.

Banking System.—The decimal system was adopted in Mexico in 1905, when a gold standard and Government coinage were substituted for an uncertain silver-standard and free coinage. The unit was made the silver peso, 9027 fine, to contain 24,438 grams of silver, the valuation to be .75 grams of gold. The peso consists of 100 centavos. The coinage includes five- and ten-peso gold pieces, the peso, fifty-, twenty-, and ten-centavo pieces of silver, nickel coins representing five and ten centavos, and bronze coins representing one and two centavos.

The banking system of Mexico is based on a plurality of banks of issue, with a single institution at the center without numerous branches, but maintaining a metallic reserve and supporting local banks by rediscounts. This system is a result of a complete reorganization of a prior one by a law enacted in 1897. The Federal banking system recognizes three classes of institutions—banks of issue, issuing notes payable to bearer on

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demand; mortgage banks, issuing mortgage bonds to cover loans on real estate; and banks of finance or promotion, issuing treasury bonds to cover loans to industry and agriculture for short terms, but longer than the term of the usual commercial loan. The mortgage banks are of the usual type existing in Europe—issuing bonds for even amounts and for long terms, capable of easy transfer in the open market. The difference between the banks of finance or promotion and the mortgage banks is mainly the term of their obligations, which was limited by the Act of 1897 to a maximum of two years and extended in 1908 to three years.

It is provided that the amount of the issues of circulating notes shall not exceed three times the paid-up capital of the bank, and that a reserve of 50 per cent. shall be held not against notes only, but also against deposits payable on demand or subject to withdrawal at not more than three days' notice. This requirement is not so exacting, however, as might appear, because the law does not count as deposits the privilege given to borrowers to draw upon the bank. All such "current accounts," as they are called, even though the depositors have the privilege of checking against them, are specifically exempted from classification as deposits.

Bank-notes are not legal tender, but circulate only by voluntary acceptance on the part of the

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public. They are required to bear on their face the promise to pay the bearer in cash the amount of the face value of the note. Notes must be redeemed at the head office of the bank or its branches, but the branches are under legal obligations only to redeem the notes which they have issued. The denominations of Mexican bank-notes are limited to \$5, \$10, \$20, \$50, \$100, \$500, and \$1,000. The smallest of these denominations, equivalent to \$2.50 in American gold, leaves a vacuum in the circulation for the use of the silver peso, which for many years was almost the only money of the country except the subsidiary coins.

State banks of issue are under the direction of a board of directors or council of administration (*consejos de administración*), the authority being exercised by a majority, and the members of the board being responsible at civil law for any infringement of the provisions of the banking law which has their sanction. The law of 1897 took several leaves from the banking history of the United States, as well as of some European countries, in requirements regarding publicity and official supervision. It provides that the banks shall publish monthly a cash statement which, besides showing balances of accounts as required by law, shall also set forth the amount of coin on hand, the amount of notes in circulation, and the

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amount of deposits payable on demand or on notice of three days or less. Aside from these monthly published statements, the banks are subject to the supervision of the Federal Department of Finance.

There are seven chartered banks of the capital (Mexico City); five independent banks of the capital, and twenty-six chartered banks of the States. A clearing-house for the banks was founded in Mexico City in 1906, with a board composed of the following institutions: National Bank of Mexico, Bank of London and Mexico, Mexican Central Bank, International and Mortgage Bank of Mexico, Mexican Bank of Commerce and Industry, International Banking Corporation, and the United States Banking Company. Several other banks became affiliated with the clearing-house. The banks of issue, on June 30, 1913, had assets and liabilities balancing at \$851,047,931; the mortgage banks, \$87,524,531; and the banks of finance or promotion, \$151,443,133.

In 1900 the Federal Banking Act was supplemented by a law authorizing the establishment of general bonded warehouses, in which imported goods may be stored without payment of custom-house duties as long as they remain in such warehouses. Warrants are issued by these establishments which enable merchants to obtain loans either from the issuing establishments, which for

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this reason are classified as banks, or from the other banks.

National Finances.—The Federal Treasury statement for the fiscal year ended June 30, 1913, showed: Ordinary revenue in cash, \$120,958,902; ordinary disbursements, \$110,781,871; surplus, \$10,177,031; available cash balance, \$13,049,638, a reduction in a year of \$42,236,905, owing to disturbed conditions. The revenue was derived from: (1) taxes on foreign commerce; (2) interior taxes, payable in the Federal District and the Territories; (3) special taxes, payable, similarly, on real estate, professions, business licenses, flour and *pulque*, inheritances, and other accounts; and (4) taxes on public services and minor accounts. The disbursements were for (1) the Legislative Department; (2) the Executive; (3) the Judicial; (4) Foreign Relations; (5) Interior; (6) Justice; (7) Public Instruction; (8) Industry; (9) Communications and Public Works; (10) Finance and Public Credit; (11) War and Marine.

During the year there were paid \$6,070,538 in reduction of the national debt, and \$18,890,086 on account of interest. The public debt outstanding at the end of the fiscal year aggregated \$310,105,945, payable in foreign money; \$134,197,810 payable in silver currency, and \$666,986 a floating debt composed of uncollected balances of previous budgets. The budget estimates for

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the fiscal year 1914-15 totaled \$152,204,898. Recent national loans include one of 4-per-cent. gold bonds, authorized amount, \$40,000,000 in United States gold, redeemable in fifty years, negotiated in 1904; a 4-per-cent. external gold loan, authorized amount, \$111,000,000, intended exclusively for the conversion or redemption of the 5-per-cent. loan of 1899, redeemable at latest in 1945, negotiated in 1910; and a 6-per-cent. external gold loan, authorized amount, \$200,000,000, of which \$60,000,000 was placed in July, 1913, by a group of French banks.

V

TRANSPORTATION, TELEGRAPH, AND TELEPHONE COMPANIES

THE mileage of railways in operation in Mexico approximates 16,000 miles. The largest and most important system is that of the National Railways of Mexico. This is not a State undertaking in the sense that the Government owns and operates the lines on its own account, the Government only exercising its authority as an ordinary shareholder through its holding of a small excess of 50 per cent. of the ordinary shares. The *Ferrocarriles Nacionales de México*, which is the official title of the National Railways system, was created by the merging of three important lines—the National Railroad of Mexico, the Mexican Central Railway, and the Mexican International Railroad. These three companies were consolidated into a single system in 1909, and subsequently the merged company purchased the Vera Cruz & Isthmus and the Pan-American railways.

In addition to these owned lines, the National

TELEGRAPH AND TELEPHONE

Railways of Mexico operates under lease the Inter-oceanic Railway and the Mexican Southern, both British built and owned lines. The total length of the National system, owned, controlled, and operated, exceeds 7,000 miles. Other important systems are the Mexican Railway, with a length of 520 miles, built with British capital in 1873; the Southern Pacific of Mexico, an American road, with a length of approximately 1,000 miles, built and owned by the Southern Pacific Company of the United States; the Tehuantepec Railway, with a length of 184 miles, built by S. Pearson & Son, Ltd., of London, for the Mexican Government, and leased to it for operation on a profit-sharing basis; and the Mexican North Western, a British undertaking with 472 miles of track.

The northern international boundary is crossed at six points—*viz.*, at Laredo, on the south bank of the Rio Grande, begins the main line of the National Railroad, which traverses Nuevo Leon and San Luis Potosi to the City of Mexico; at Ciudad Porfirio Diaz begins the International Railway, which crosses the States of Coahuila and Durango; at Ciudad Juarez begins the Mexican Central and the Mexican North Western, the former of which traverses the great central uplands to the City of Mexico, with branches to the Gulf and Pacific coasts; at Nogales, in Ari-

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zona, the Southern Pacific begins, extending southward through the State of Sonora and down the west coast to Mazatlan; and from Alpine, on the Rio Grande, the Kansas City, Mexico & Orient line is being extended across northern Mexico to the port of Topolobampo on the Gulf of California.

On the Gulf coast are four main ports of entry: Matamoras, Tampico, Vera Cruz, and Puerto Mexico. From Tampico lines of the Central Mexican traverse the tropical lowlands to Monterey, Aguascalientes, and Mexico City. At Vera Cruz are the Gulf terminals of the Interoceanic and Mexican lines, both of which extend to Mexico City. A third line, the *Vera Cruz al Isthmo*, extends southeast, then south to the Tehuantepec road, and thus connects Vera Cruz with the Pacific coast. The Tehuantepec road, built to handle freight between the Atlantic and Pacific, begins at Puerto Mexico and extends to Salina Cruz. The Pan-American road begins at San Geronimo, on the Tehuantepec line, and is in operation to the border of Guatemala. A new line is being laid out from Santa Lucrecia, on the Tehuantepec road, to Campeche, designed to link the United Railways of Yucatan with the National Railways system. The Mexican Southern Railroad extends from the city of Puebla, about 100 miles southeast of Mexico City, to Oaxaca, in

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the State of the same name and thence about sixty miles to Ejutla.

In addition to these trunk lines there are numerous local ones of varying importance, built under State or Federal concessions, and owned or operated by large mining and land companies, or by public utility companies, such as the Mexico Tramways and the Puebla Tramway Light and Power companies.

All railways in Mexico have been built under concessions providing for their ultimate reversion to the Government, with compensation for rolling-stock, buildings, and material on hand at the time of transfer, and are operated under the Mexican railway law, which was based on a study of the railway legislation of various countries. There is a standing Railway Commission which acts as adviser to the Minister of Communications, composed of nine members, five of whom are nominated by the Government, two by the railway companies, one by the associated chambers of commerce, and one by the agricultural societies.

Telegraph and Telephone Companies. — The Mexican Telegraph Company, incorporated in New York in 1878, has three cables in the Gulf of Mexico from Galveston, Texas, to Vera Cruz, comprising about 2,100 miles, a direct cable line from Galveston to Coatzacoalcos, 825 miles, and a

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land line from Vera Cruz to Mexico City, and also owns one-third of a cable from New York to Colon, Panama, 738 miles. Its authorized capital is \$5,000,000, and its general office is in New York City. The Mexican Telephone and Telegraph Company, incorporated in Maine in 1905, operates 21 exchanges and about 12,000 telephones. It has an authorized capital of \$1,000,000, and its general office is in Boston.

The interior telegraph and the postal services are Government monopolies, both under the jurisdiction of the Department of Communications and Public Works.

VI

CONSTITUTION AND GOVERNMENT

THE Constitution of the Republic of Mexico was adopted in 1857, and amended in 1873, 1886, 1901, 1903, and 1904. It recognizes that the rights of man are the basis and objects of social institutions; that in the Republic all men are born free; that no one can be obliged to render personal service without a fair remuneration and without his full consent; that no retroactive law can be enacted; and that under specific conditions the President may suspend the constitutional guarantees with the exception of such as safeguard human life. Mexicans are defined as those born within or outside of the territory of the Republic of Mexican parents; foreigners naturalized according to the laws of the Federation; and foreigners who acquire real estate in the Republic or who have Mexican children born to them, unless they manifest their intention of preserving their nationality. The Constitution also defines Mexican citizens as those who, besides being Mexicans of the male sex, according to the above definition, pos-

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sess the qualifications of being eighteen years old if married, or twenty-one if unmarried, and have an honest means of livelihood.

The supreme power of the Federal Government is exercised by a General Congress, comprising a Senate and a Chamber of Deputies; a Judiciary, consisting of a Supreme Court and various Circuit and District courts; and an Executive, the depository of the Supreme Executive Power of the Federation, a single individual styled the President of the United Mexican States. The Congress holds two sessions annually, from September 16 to December 15, and from April 1 to May 31, and a permanent committee of both Houses sits during the recesses. The Senate consists of two members from each State, elected for four years, one-half of the body being renewed every two years. Deputies are elected on the basis of one member for every 40,000 inhabitants or fraction exceeding 20,000 for two years. The Supreme Court consists of fifteen justices, who are popularly elected by "indirect ballot in the first degree" for terms of six years. The qualifications for election to the Presidency are: to be a born Mexican citizen in full enjoyment of the rights as such; to be over thirty-five years of age at the time of election; to be a resident of the country at the time of election; and not to belong to the ecclesiastical state. The electors who designate

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a President also by the same method and at the same time choose a Vice-President, who must possess the same qualifications as the President. The presidential term is six years.

Under the President the executive functions of the Government are exercised by a Cabinet of eight members, severally in charge of the Ministry of Foreign Affairs and the Departments of the Interior; Justice; Public Instruction and Fine Arts; Fomento; Communications and Public Works; Finance, Public Credit, and Commerce; and War and Marine.

Department of War and Marine.—According to the Constitution, it is the obligation of every Mexican to serve in the army or national guard, but, so far, no law establishing and regulating compulsory military service has been enacted. Officially, the army consists of twenty-eight regiments of infantry (in Spanish called *batallones*, the term regiment being applied exclusively to the cavalry and the artillery corps), two of which are called regional regiments, employed for service in the Territory of Quintana Roo, that part of Yucatan inhabited by the subjugated Maya Indians; two incomplete regiments of infantry; two regional companies of infantry, for service in Lower California; a regiment of sappers and miners; a squadron of Presidential guards; a squadron of army gendarmes; fourteen regiments

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of cavalry complete and four incomplete; two corps of auxiliary militia, serving in the States of Puebla and Sonora; a squadron serving as escort for the Geographical Exploration Commission; two regiments of mounted artillery; one regiment each of light and mountain artillery; and a company serving machine-guns. The educational establishments are the Military Academy at Chapultepec; the *Escuela Militar de Aspirantes* near Tlalpam; a Naval Academy at Vera Cruz; a college of practical military surgery; a veterinary college; and schools for the instruction of soldiers in the rudiments of general knowledge in all the barracks. The Rural Guards of the Federation and the *Fuerzas de Seguridad* of the several States are organizations under the jurisdiction of the Interior Department to safeguard the highways and to assure personal safety to wayfarers and residents outside the centers of population.

Mexico has never attempted the organization of a modern naval force. The few vessels she possesses are intended for the purposes of instruction, patrol duty, and transport service. The official roster enumerates the following vessels: the corvettes *Zaragoza* and *Yucatan*, both training-ships; the gunboats *Bravo*, *Morelos*, *Tampico*, *Vera Cruz*, and *Democrata*; and the transports *Progreso* and *Oaxaca*.

Public Worship and Education. Religion.—The

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great bulk of the people are of the Roman Catholic faith, but all religions are tolerated, and there is no State church. Episcopalians, Presbyterians, Baptists, Methodists, and Evangelicals have places of worship, besides schools, seminaries, and benevolent institutions in Mexico City. Excepting the Protestant edifices, the churches of Mexico, nearly all of them built during the colonial epoch, are, almost without exception, in the style of the Spanish Renaissance, modified and in certain cases vitiated by baroque or rococo features. The Cathedral of Mexico, which occupies substantially the same site as the great Aztec Temple of the war-god Huitzilopochtli, was begun in 1573, and dedicated in 1667, but the towers were not completed till 1791.

Education.—A law of 1896 established compulsory instruction in the elementary grades in the Federal District and Territories for children between the ages of six and twelve years, such instruction to be given either at official or private schools or at home, the enforcement of the law being vested in vigilance committees composed of prominent residents. In the various States and Territories educational activities are established and regulated by local enactment. For higher education there are, in Mexico City, the following institutions, in all of which instruction is free: the National Preparatory College, National Col-

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lege of Jurisprudence, National Medical College, National School of Engineers, National College of Agriculture and Veterinary Surgery, High School of Commerce and Administration, National School of Fine Arts, National Conservatory of Music and Declamation, National School of Arts and Trades for Men, School of Arts and Trades for Girls, Normal College for Men, and Normal College for Women. The attendance at the preparatory and professional schools in the Federal District averages about 6,000 annually.

Museums and Libraries.—The National Museum, founded in 1865, contains collections illustrative of natural history, anthropology, ethnology, archæology, and Mexican history. Special museums, containing collections indicated by their titles, include the National Artillery Museum, Museum of the Geographical Exploration Commission, Museum of the Commission of Agricultural Parasitology, Museum of Geology and Mineralogy, Museum of Hygiene, Museum of Anatomy, and Museum of the Agricultural Society. The chief public libraries in the Federal District are the National Library, opened in 1884, containing more than 365,000 volumes; Library of the National Museum; and libraries of the various executive departments of the Government. There are also many libraries owned by private scientific societies.

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Literary and Scientific Associations.—The chief organizations of this character in the Federal District are the Mexican Geographical and Statistical Society, founded in 1833; National Academy of Medicine, founded in 1874; Mexican Academy of Jurisprudence and Legislation, founded in 1889; Mexican Academy of Exact Physical and Natural Science, founded in 1894; Associations of Engineers and Architects, founded in 1883; Society of Natural History, founded in 1878; Pedro Escobedo Medical Society, founded in 1872; Antonio Alzate Scientific Society, founded in 1884; Academy of the Spanish Language, founded in 1875; Mexican Geological Society, founded in 1903; and the Academy of Social Science, founded in 1905.

VII

STATES AND TERRITORIES OF THE FEDERATION

MEXICO is divided politically into a Federal District, twenty-seven States, and three Territories. The following is a brief exposition of the geographical location of these divisions and of their economic interests; the area, population, and capital city of each are given in the table on a preceding page.

The Federal District.—This Territory, which was set apart for the independent and exclusive use of the Federal Government, originally formed part of the State of Mexico, which marks its boundaries on all sides except the south, where it touches the State of Morelos. Formerly divided into one urban municipality and four rural prefectures, under a law of 1903, it now consists of thirteen municipalities, of which Mexico City is chief. The city occupies a small plain in the southwest of the Valley of Mexico. It is regularly laid out, and is not only the political, financial, and commercial center of the Republic, but is

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becoming an important manufacturing town. Until recent years, on account of the lack of water power and cheap fuel, it did not rank as an industrial city, but the development of electric power and the possibility of transmitting it for long distances has produced a remarkable change in this respect. By the railways the city has direct connection with nearly all of the State capitals and the principal ports of the country.

Aguascalientes, a central State, is bounded on all sides, except the south and southeast, by the State of Zacatecas, and on the south and southeast by the State of Jalisco. It occupies an elevated plateau region extending eastward from the Sierras Fria and Laurel. Although one of the smallest States in the country, it is second only to Vera Cruz in the large proportion of area under cultivation, the products being generally those of a temperate climate, as the staple cereals, sweet-potatoes, chick-peas, and green peppers. Gold, silver, iron, lead, copper, tin, sulphur, lime, and gypsum are included in the mineral products, and the mining industry is important.

Baja California, a Territory, is the peninsular prolongation southward of the American State of California, and is bounded on the north by that State, on the east by the Colorado River and the Gulf of California, and on the south and west by the Pacific Ocean. A considerable part of the

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Territory is owned by six large companies, who have done no practical development. Sugar-cane, maize, and tobacco are cultivated in a few places for local needs; stock-raising is a profitable industry in the Ensenada district; and gold, silver, copper, salt, sulphur, manganese, lead, and onyx are among the known mineral resources, a few only of which are worked. The Territory has no railroads, and transportation is afforded by ox-cart and mule-teams.

Campeche, a Gulf State, occupies the western part of the peninsula of Yucatan; is named from its principal forest product, *palo de Campeche* (log-wood); and is bounded on the north by the State of Yucatan, on the east by Yucatan and the Territory of Quintana Roo, on the south by the Republic of Guatemala, on the southwest by the State of Tabasco, and on the west by the Gulf of Mexico. The surface generally consists of heavily forested plains, containing valuable dye and cabinet woods, except in the northern districts, which are more open and well adapted for stock-raising and general agriculture. The chief industries are the cutting and exportation of logwood, the manufacture of palm hats, hammocks, and tortoise-shell articles, and stock-raising.

Chiapas, a Pacific coast State, is bounded on the north and northeast by the State of Tabasco, on the east by the Republic of Guatemala, on the

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south by the Pacific Ocean, on the west by the State of Oaxaca, and on the northwest by the State of Vera Cruz. In the Sierras are many fertile districts with temperate climate and great agricultural promise. Mahogany and Spanish cedar abound in the timber-lands; a fine quality of tobacco for cigars and cigarettes is grown in the Department of Simojovel; cotton thrives in Tuxtla and Comitán, cacao in Pichucalco, coffee and rubber in Soconusco, and apples, peaches, and nectarines in the higher elevations, and pineapples, custard apples, bananas, melons, alligator pears, maize, and beans in the lower. The raising of cattle, horses, mules, and swine is also an industry of importance.

Chihuahua, a northern border State, is bounded on the north and northeast by the United States, on the east by the State of Coahuila, on the south by the State of Durango, on the southwest by the State of Sinaloa, and on the west by the States of Sinaloa and Sonora. Four-fifths of this State forms an upland plain, varying in height from 4,000 to 8,000 feet, and, although extensive sand and alkali stretches are characteristic features, many large tracts have been transformed into agricultural and grazing lands by irrigation and the sinking of artesian wells. The grazing of cattle, sheep, and goats gives occupation to a large number of people, many *haciendas* comprising 1,000,-

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ooo acres and upward, and from this industry is secured a great part of the wealth of the State. Statistics show 24,314,311 acres of land used for grazing, 10,218,421 acres in forest, and 330,035 acres in farms under irrigation; value of staple farm crops in a year, \$5,712,698; of forest products, \$2,429,568. Mining is the most developed industry of the State, the products being gold, silver, copper, lead, and iron. Other industries of importance are cotton, woolen, and flour milling, brewing, smelting and refining, and rolling-mill and foundry work. Parral, fifty miles west of Jiminez, on a branch of the National Railway, is one of the most important mining districts of the country, in which are situated the Minas Nuevas, Santa Barbara, Almoloya, Roncesvalles, and other notable camps.

Coahuila, a northern frontier State, is bounded on the north by the United States, on the east by the State of Nuevo Leon, on the south by the States of San Luis Potosi and Zacatecas, and on the west by the States of Durango and Chihuahua. The southeastern portion of the State is too mountainous to be suitable for extended cultivation; the plains in the northwest afford fine pasturage for stock-raising; and in this district lies a part of the famous Laguna region, which, from an approximate area of 200,000 acres, produces nine-tenths of all the cotton grown in the country.

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A considerable amount of the guayule shrub is found in this State, which is worked up in the large rubber-plants of the Laguna district, where seven factories treat about 200 tons per day. The mineral industry is important, the principal output being lead, silver, zinc, and coal. At Las Esperanzas is mined the bulk of the native coal used in the country.

Colima, a Pacific coast State, and the second smallest in the confederation, is bounded on the north and northeast by the State of Jalisco, on the east by the State of Michoacan, and on the south and west by the Pacific Ocean. Agriculture and stock-raising are the principal sources of wealth, the most important products being sugar, rice, maize, palm oil, coffee, and cotton. Iron, copper, and lead deposits are known to exist, but there has been no systematic attempt to develop them. Other products of commercial value are lumber and salt.

Durango, a north central State, is bounded on the north by the State of Chihuahua, on the east by the State of Coahuila, on the southeast by the State of Zacatecas, on the south by the States of Zacatecas and Jalisco and the Territory of Tepic, and on the west by the State of Sinaloa. The most important agricultural region is included in the districts (*partidos*) of Mapimi, Durango, San Juan del Rio, and Papasquiario, the products being

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barley, corn, wheat, cotton, tobacco, grapes, and other fruits, leguminous plants, sugar-cane, and cotton. Stock-raising is a flourishing industry, especially in the districts of Durango, El Ojo, Cuencamé, Nazas Indé, and Papasquiario. Durango is one of the leading mining States of Mexico, the best-known camps being Guanacevi (gold and silver), Velardeña (silver, lead, and copper), El Ojo and Indé (gold and silver), Bacis and Sapioris (gold and silver), San Dimas (silver, with gold), Promontario (tin), Coneto (silver, with copper), and Mapimi (silver, lead, and gold). The *Cerro del Mercado* (Iron Mountain) is an immense deposit of iron close to the city of Durango. Sulphur, rubies, and other deposits exist, but are not worked.

Guanajuato, a central State, is bounded on the north by the State of San Luis Potosi, on the east by the State of Querétaro, on the south by the State of Michoacan, and on the west by the State of Jalisco. This State has an average elevation of 6,000 feet and a semi-tropical climate. The surface in the northern half is broken by two mountain ranges; in the southern half it is covered by fertile plains, in which is situated the well-known Bajio district, celebrated for its large production of the staple cereals. Alfalfa, grasses, and all other forage growths are green practically the entire year. Herein is one of the richest min-

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eral areas in the country, producing gold, silver, mercury, tin, iron, lead, argentiferous lead and copper, bismuth, hematite, and sulphur.

Guerrero, a Pacific coast State, is bounded on the north by the States of Michoacan, Mexico, Morelos, and Puebla, on the east by the State of Oaxaca, on the south by the Pacific Ocean, and on the west by the State of Michoacan. With the exception of the low coastal plain, this area consists almost entirely of the spurs and offshoots of the Sierra Madre range, rendering the valleys narrow and difficult of access. Agriculture is in a backward condition; cereals are grown for local needs only; and the chief exports are sesame, cotton-seed, and copra. Cattle-raising is extensively carried on throughout the State; a variety of fruits is grown in the district around Acapulco; coffee is very productive near the coast at Atoyac and in the interior north of Chilpancingo; and about sixty mining companies are operating, chiefly in the neighborhood of Iguala and along the Balsas River, obtaining gold, silver, copper, and lead.

Hidalgo, a central State, is bounded on the north by the State of San Luis Potosi, on the northeast by the State of Vera Cruz, on the east by the State of Puebla, on the south by the States of Tlaxcala and Mexico, and on the west by the State of Querétaro. Here, in addition to

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the staple cereals, subtropical products, such as the orange and sugar-cane, are cultivated, and the plains of Apam are famous for their maguey-plantations. Silver-mining is the leading industry, but deposits of iron are worked at Encarnación, Zacualtipan, and Apulco. It was at Pachuca that Bartolomé de Medina discovered the "patio" process of reducing silver ores with quicksilver in 1557, and his old *hacienda de beneficio* is still to be seen.

Jalisco, a Pacific State, is bounded on the north by the Territory of Tepic and the States of Durango, Zacatecas, and Aguascalientes, on the northeast by the State of San Luis Potosi, on the east by the States of Guanajuato and Michoacan, on the south by the States of Michoacan and Colima, and on the southwest and west by the Pacific Ocean. This region is known as the "granary of Mexico," because of the extent of the cultivation of cereals. There is an upland district, having an average elevation of 5,000 feet, where some of the most fertile and prosperous agricultural tracts of the country are to be found. Sugar-cane is extensively cultivated in the valleys of Zapotlan, Tamagula, and Ahualulco, and a high-grade tobacco in Las Penas Valley. The cattle industry thrives; the maguey is cultivated for the manufacture of a spirituous liquor known as *tequila*; gold and silver are found at Hostotipa-

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quillo; copper ores at Etzatlán, Ameca, and elsewhere; iron ore at Tula; and anthracite near Zapotlán.

Mexico, a central State, is bounded on the north by the State of Hidalgo, on the east by the States of Tlaxcala and Puebla, on the south by the Federal District and the States of Morelos and Guerrero, on the west by the State of Michoacán, and on the northwest by the State of Querétaro. The Valley of Mexico has an average elevation of more than 7,000 feet, and that of Toluca of about 8,000 feet. The former has a cool and agreeable climate; the latter a cold climate. The principal industries of this State are agricultural, the production consisting of cereals, sugar, maguey, coffee, and fruit. Stock-raising is also a profitable industry. Other notable activities are the manufacture of cotton and woolen goods, flour, glassware, pottery, bricks, wines, spirits, and *pulque*. Mining yields gold, silver, lead, copper, antimony, and iron.

Michoacán, a Pacific State, is bounded on the north by the State of Guanajuato, on the northeast by the State of Querétaro, on the east by the State of Mexico, on the south by the State of Guerrero and the Pacific Ocean, and on the west by the States of Colima and Jalisco. It is almost evenly divided by the eastern range of the Sierra Madre into a northern portion in the center pla-

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teau region and a southern portion broken up into fertile valley and wooded ranges sloping gradually to the Balsas River. The Pacific slope and southern portion contain fine timber as yet not developed; in the plateau region cereals, cotton, chick-peas, tobacco, sugar, and coffee are grown, chiefly for local needs. The mining industry is important, principally centered at Tlalpujahua (gold and silver), Angangueo (silver), Ingauran (copper), and Coalcoman (iron).

Morelos, a central State, is bounded on the north by the Federal District and the State of Mexico, on the east by the State of Puebla, on the south by the State of Guerrero, and on the west by the State of Mexico. This State is essentially an agricultural one, producing sugar (which is the characteristic crop), rice, coffee, and the chief cereals. Here are undeveloped deposits of silver, lead, and iron.

Nuevo Leon, a northern State, is bounded on the north by the State of Coahuila, on the northeast by the United States and the State of Tamaulipas, on the east by the State of Tamaulipas, on the south and southwest by the State of San Luis Potosi, and on the west by the State of Coahuila. Agriculture, mining, and smelting constitute the principal industries. The chief products of agriculture are the staple cereals, sugarcane, and fibers; of mining, lead, zinc, and silver.

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There are a large number of sugar-mills, cotton and woolen mills, smelting and iron and steel works.

Oaxaca, a Pacific State, is bounded on the north by the States of Puebla and Vera Cruz, on the east by the State of Chiapas, on the south by the Pacific Ocean, and on the west by the State of Guerrero. This State covers the greater part of the Isthmus of Tehuantepec, and its agricultural products are of the usual tropical and sub-tropical variety. The Valle Nacional is a famous tobacco region; near the State of Vera Cruz are large sugar-plantations; mineral productions are gold, silver, and onyx; coal and iron deposits are known but undeveloped.

Puebla, a central State, is bounded on the north and east by the State of Vera Cruz, on the south by the States of Oaxaca and Guerrero, and on the west by the States of Morelos, Mexico, Tlaxcala, and Hidalgo. There are some 300,000 *haciendas*, with an annual production of \$40,000,000, principally in the staple cereals, sugar, coffee, and rice, and over forty factories engaged in the manufacture of cotton thread and cloth and print goods. Other manufactures include the famous ornamental iron-work, ornamental tiles, wine, beer, alcohol, starch, beds, cigarettes, chocolate, spaghetti, glass, mosaic, tanned leather, and hats. Mining is confined to copper, with some silver and

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gold. Stock-raising flourishes here, and a large export trade is done in hides and goat-skins.

Querétaro, a central State, is bounded on the north by the State of San Luis Potosi, on the east by the State of Hidalgo, on the southeast by the State of Mexico, on the south by the State of Michoacan, and on the west by the State of Guanajuato. Agriculture is here undeveloped, because of the uncertain rainfall and absence of irrigation enterprise. Mining of gold, silver, antimony, and cinnabar is of some importance. In the central and southern regions are fertile areas producing cereals, leguminous plants, tobacco, and sugar-cane.

Quintana Roo, is a Territory along the east coast of the peninsula of Yucatan, from which it was politically separated in 1902. There is little or no agriculture. Near the coast the land is generally thickly covered with mangrove and cocoanuts; farther inland are found dyewoods of all kinds; and still farther, cedar and mahogany. Chicle is one of the principal articles of export. There are valuable fisheries along the coast, and turtles and sponges are abundant.

San Luis Potosi, a central State, is bounded on the north by the States of Coahuila and Zacatecas, on the northeast and east by the States of Nuevo Leon and Tamaulipas, on the east by the States of Tamaulipas and Vera Cruz, on the south by

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the States of Hidalgo, Querétaro, and Guanajuato, on the southwest by the States of Jalisco and Zacatecas, and on the west by the State of Zacatecas. The State lies entirely in the central plateau region, with an average elevation of 6,000 feet. Agriculture is as yet inadequately developed, although the lands are fertile and the rainfalls usually sufficient for the successful raising of crops. Maize and corn are grown in the central and western districts, and various tropical products in the eastern. Asphaltum and petroleum deposits in the eastern and southeastern sections are being actively developed. The mining output, chiefly gold, silver, copper, lead, and zinc, has an average annual value of \$8,000,000.

Sinaloa, a Pacific State, is bounded on the north and northeast by the States of Sonora and Chihuahua, on the east by the State of Durango, on the southeast by the Territory of Tepic, and on the south and west by the Gulf of California and the Pacific Ocean. The surface consists of a narrow tropical coastal zone, a broad forested belt of the higher ranges of the Sierra Madre Occidental, and an intermediate subtropical zone of an average elevation of 2,000 feet, where there are excellent agricultural lands. The annual value of the agricultural production approximates \$8,000,000, consisting chiefly of cereals, tobacco, and sugar. Tomatoes are here cultivated extensively for

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American markets. Stock-raising and the exportation of hides are important; the forests contain many valuable woods; and mining is the chief industry of the State.

Sonora, a northwestern State, is bounded on the north by the United States, on the east by the State of Chihuahua, on the south by the State of Sinaloa, and on the west by the Gulf of California; is the second largest State in the country. The surface is much broken by ramifications of the Sierra Madre Occidental; the State is traversed by four rivers; the soil of the mountain valleys is fertile; and the chief industry is mining, the products being copper, gold, and silver, in order of importance.

Tabasco, a Gulf State, is bounded on the north by the Gulf of Mexico, on the east by the State of Campeche and Guatemala, on the south by Guatemala and Chiapas, and on the west by Vera Cruz. It is essentially an agricultural State, the principal products being sugar, cacao, rum, rubber, coffee, corn, and cattle. Two navigable rivers constitute the principal means of communication. In the south and southeast are extensive forests, from which valuable timber and dyewoods are exported.

Tamaulipas, a northern State, is bounded on the north by the United States, on the east by the Gulf of Mexico, on the south by the States of

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Vera Cruz and San Luis Potosi, and on the west by the State of Nuevo Leon. The most fertile agricultural districts are between the Sierra Madre and the coast, in the southern part; cattle-raising is carried on principally in the northeast and southwest; zinc and lead are found in the Victoria district; and extensive petroleum deposits are in the southern half of the State and the region tributary to Tampico, the Mexican oil metropolis and the second port of the country.

Tepic, is a Territory, bounded on the north by the States of Durango and Sinaloa, on the east and south by the State of Jalisco, and on the west by the Pacific Ocean. It is chiefly concerned with agriculture, wheat and other cereals, coffee, tobacco, and sugar being largely cultivated, and it also has considerable gold, silver, copper, and lead mining interests.

Tlaxcala, a central State, is bounded on the north, east, south, and southwest by the State of Puebla, on the west by the State of Mexico, and on the northwest by the State of Hidalgo. This, too, is an essentially agricultural State, cereals and the maguey plant forming the chief products.

Vera Cruz, a Gulf State, is bounded on the north by the State of Tamaulipas, on the east by the Gulf of Mexico, on the southeast by the States of Tabasco and Chiapas, on the south by

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the State of Oaxaca, and on the west by the States of Puebla, Hidalgo, and San Luis Potosi. Much of the chief industrial activity of this State has already been outlined on a preceding page under the caption of "Mexico's Greatest National Asset." In addition thereto, it is to be noted that the general agricultural production has an average annual value of upward of \$70,000,000, that a considerable trade is done in the exportation of various fiber plants, that oranges and tobacco are valuable articles of export, that textile-mills lead in a long list of manufacturing enterprises, and that, excepting petroleum, the mineral resources of the state are practically undeveloped.

Yucatan, a Gulf State, occupies the northwest part of the peninsula to which it gives its name, and is bounded on the north by the Gulf of Mexico, on the east and south by the Territory of Quintana Roo, on the southwest by the State of Campeche, and on the west by the State of Campeche and the Gulf of Mexico. The surface is loose soil, covering coralline limestone, which permits of the rapid percolation and evaporation of the rainfall, conditions exceedingly favorable for the cultivation of the maguey plant, from which the sisal hemp or henequen of commerce is produced, and which is the principal source of the revenue of the State.

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Zacatecas, a central State, is bounded on the north by the States of Durango and Coahuila, on the east by the State of San Luis Potosi, on the south by the States of Aquasalientes and Jalisco, on the west by the State of Jalisco, and on the northwest by the State of Durango. It is entirely on the central plateau, having an average elevation of 7,700 feet, and its industrial life is nearly equally divided between farming, mining, and stock-raising.

VIII

AMERICAN INVESTMENTS

IMMENSE as is the wealth of Mexico in gold, silver, and copper, it is richer in oil than all the other minerals combined, and while oil is found in many of the States, it is in the Tampico and Tuxpam districts along the Gulf that its greatest development has been reached. It is a matter of record that the Standard Oil Company alone made \$240,557,197 in the period of 1882-96, and \$558,226,625 in the period of 1897-1906. Its banner years were 1907-12, when its profits were estimated at \$802,507,552. At one time this company had practically a monopoly of production in Mexico, but to-day its chief activity there is the refining of oil. The sharp rivalry that existed for many years between it and the English interests has now nearly, if not wholly, ceased.

In 1916 there were forty-six companies operating in this, the greatest of all oil zones, the largest being the Mexican Petroleum Company, the Metropolitan Petroleum Company (both American), and

AMERICAN INVESTMENTS

the Mexican Eagle Company (English). Edward L. Doheny is at the head of the Mexican Petroleum Company, Richard Levering of the Metropolitan Petroleum Company, and Lord Cowdray, formerly Sir Weetman Pearson, of the Mexican Eagle Company. Other large companies are the Tuxpam and Ozuluama Petroleum Company (George D. Cook & Co., New York), and the Shell Company (English), the latest to enter the field. The production of all companies is estimated at from 300,000 to 500,000 barrels per day, and in the single year of 1913 the total output was 24,574,500 barrels.

The following is a list of the American companies having oil interests in Mexico: Mexican Petroleum Company, Texas Company, Pierce Oil Corporation, Gulf Refining Company, East Coast Oil Company (Southern Pacific), Penn-Mex Fuel Company, Standard Oil Company of New Jersey, Port Lobos Oil Company (American Tobacco interests), Freeport Mexican Fuel Oil Company (Freeport Texas Sulphur Company), and the Tampico Oil Company (John Hays Hammond interests).

It has already been noted that the estimated total investment in the various mining interests is \$647,200,000, of which \$499,000,000 is American capital, \$87,200,000 British, \$10,000,000 French, and \$29,400,000 Mexican. The most important

PLAIN FACTS ABOUT MEXICO

of the American mining interests are in the copper-fields, and are controlled by the Guggenheims, J. P. Morgan & Co., and Phelps, Dodge & Co. The principal American owners of the railroad interests are J. P. Morgan & Co., Kuhn, Loeb & Co., Speyer & Co., and Hallgarten & Co.

For business reasons it is impossible to give even an approximate estimate of the amount and distribution of American capital in the various fields of investment in Mexico. Here are two statements of such capitalization, both from official sources, and both widely divergent, the first claimed to be under, the second over, a reasonable estimate. The first totals \$450,000,000, and comprises: Mexican Government securities, \$30,000,000; Mexican railway shares and bonds, \$40,000,000; Mexican railways in course of construction, principally the Southern Pacific, \$70,000,000; mining and smelting interests, \$150,000,000; rubber interests, \$15,000,000; oil and refineries, \$40,000,000; lumber, \$50,000,000; sugar, \$30,000,000; and miscellaneous (cattle, hemp, real estate, etc.), \$25,000,000.

The second statement (by Marion Letcher, United States consul at Chihuahua) totals the great sum of \$1,057,770,000, and comprises: Railway stocks, \$235,464,000; railway bonds, \$408,926,000; bank stocks, \$7,850,000; bank deposits, \$22,700,000; mines, \$223,000,000; smelters, \$26,-

AMERICAN INVESTMENTS

500,000; national bonds, \$52,000,000; timberlands, \$8,100,000; ranches \$3,150,000; farms, \$910,000; live-stock, \$9,000,000; houses and personal property, \$4,500,000; soap-factories, etc., \$1,200,000; breweries, \$600,000; miscellaneous factories, \$9,600,000; tramways, power, and electric-light plants, \$760,000; wholesale stores, \$2,700,000; retail stores, \$1,680,000; oil business, \$15,000,000; rubber industry, \$15,000,000; professional outfit, \$3,600,000; insurance, \$4,000,000; theaters, \$25,000; and hotels, \$260,000.

Regarding the second statement, it should be noted that Consul Letcher pointed out that the figures indicated the par value rather than the market value of the various securities included in his report, and this will account in large measure for the great difference in the totals of the two statements. But they serve at least to indicate the richness of Mexico's natural resources, the vast amount of American and other foreign capital already invested, and the opportunities for further development.

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